

# Camera Underwater Housing D90 (Nikon)

## User Manual

**Contents:**

- 1. Introduction**
- 2. Specifications**
- 3. Function Controls**
- 4. Set up Instructions**
- 5. Use & Care of Housing**
- 6. Service**
- 7. Warranty**



## 1. Introduction

Made of 6061 aluminum, 10Bar Housing is a sturdy choice for the LXG10 camera. For those who favor small cameras, it is the ideal housing to suit their needs. It is equipped with full-function control buttons, bulkhead connector for external flash and interchangeable ports for conversion lens. The acrylic back cover allows taking pictures and checking on the camera much easier. For closure, the double o-rings and key hole lock design provide ease of use and added security. Now you can use small cameras with the feel and function of professional housings.

## 2. Specifications

Test Pressure	Housings are individually tested to 10 Bar (90 m / 300 ft.) Recommended working pressure 60 m.
Closure Design	Double O-rings, latch with lock
Body Material	mm (LxWxH)
Overall Size	Approximately kg (Housing only)
Total Weight	Approximately Kg (Housing only)

Buoyancy (with camera)	Slightly negative in salt water
Accessories	Spare main O-ring Universal tool Silicone O-ring grease Carry bag Red filter (optional) Extension arm for strobe or video light (optional) Video light VL035(optional) Macro and Wide Angle lens (optional)

3. Function Controls

3.1 Buttons & Parts

- (1) BULKHEAD
- (2) EXPOSURE COMPENSATION DIAL
- (3) MODE DIAL
- (4) ISO SPEED DIAL
- (5) SHUTTER / ZOOM
- (6) POWER ON/OFF
- (7) PLAYBACK
- (8) (AE LOCK/FE LOCK) / (MICROPHONE) BUTTON /  
(METERING LIGHT) / (JUMP) BUTTON /  
(AF FRAME SELECTOR) / (SINGLE IMAGE ERASE) BUTTON
- (9) CONTROL DIAL
- (10) (MACRO) BUTTON /  
(MANUAL FOCUS) BUTTON
- (FLASH) BUTTON /  
(CONTINUOUS SHOOTING) /



## **(SELF-TIMER) BUTTON**

### **(11) FUNC. SET**

### **(12) DISPLAY / MENU**

### **(13) PRINT / SHARE**

## **3.2 Control Details**

**(1) FLASH ON** - align the white dot towards the lid, press down and turn towards the 'lighting' logo, the flash should pop up.

**(2) FLASH OFF** - turn the 'Flash On' white dot towards the lid, turn the button towards the 'no lighting' logo. Make sure that the Flash is turn off before opening the lid.

**(3) FOCUS** - press to activate / confirm.

**(4) CURSOR** - rotate until the white dot is over the required direction and press, when not in use rotate the white dot towards the screen to facilitate the 'AF/AE LOCK / Menu/Set' function.

**(5) ASPECT RATIO** -rotate to select the required ratio.

**(6) MODE DIAL** - press down and turn to select the required mode.

**(7) SHUTTER / ZOOM** - press to activate the shutter, turn to activate the zoom function.

**(8) ON / OFF** - align the white dot towards the lid, press and turn to on or off.

### **(9) CONTROL DIAL**

**(10) DISPLAY / DELE** - rotate until the white dot align and press.

**(11) REC / PLAYBACK** - press and turn to select.

**(12) AF /AE LOCK / MENU / SET** - rotate until the white dot align and press, when not in use rotate the white dot until pointing downward to facilitate the 'cursor' function.

**For the full list of camera functions and settings accessed by each control, please consult the Canon G10 camera instruction manual.**

## **4. Set up Instructions**

### **4.1 Special note on responsibility for watertight integrity**

Each housing is individually inspected and hydrostatically tested in the factory. The design of the main piston O-ring seal is among the most reliable in the industry and the watertight integrity is excellent. This special O-ring design provides a perfect seal even if there is any movement between the body and lid due

to change of ambient pressure. However please note that responsibility for ensuring the integrity of the watertight seal lies entirely with the user. 10 BAR accepts no liability for damage to, or loss of any equipment used with, or placed inside the housing. Users are highly recommended to carry out in-water test of the housings without installing of the camera for their first dive after, change of new ports or alternation of any new configuration. The test can be carried out by lowering the housing with ballast to the working depth or dive down to the safe diving range.



The O-ring seal is the main barrier between the water outside and the air space within the camera. It is an effective barrier only if the seal is properly maintained. The O-ring seal should be inspected before every dive. The following information is provided for your guidance in using and maintaining the O-ring seal.

#### **4.2 Maintaining the O-ring Seal**

If the main body to lid O-ring is not installed, install the O-ring before diving. This is the only user serviceable O-ring. Its care and maintenance is critical to the watertight integrity of the housing. The O-ring should be replaced at the service interval (see section on service). If the O-ring is contaminated, or not already installed, inspect grease and install the O-ring according to the following guidelines.

#### **4.3 Inspection, cleaning and re-installation of the O-ring**

##### **Tools**

A soft cotton bud or sponge applicator, make sure these are free of all chemicals or contamination such as loose fibers, and the tube of silicone grease supplied with the housing. Note other types of silicone grease specifically for use with underwater camera equipment can usually also be used. It is advised to carry out the following procedure on a firm clean level surface, (e.g. at a table), to prevent skidding especially useful to have when diving from a boat.

##### **When to maintain the O-ring seal**

Remove the O-ring periodically for inspection. It is not necessary to remove, clean and re-install the O-ring after every dive provided the O-ring did not become contaminated. As a rule of thumb set up the camera and housing before a day's diving. If the housing is required to be opened between dives for changing memory card or re-charging batteries, make sure the outside of the housing is thoroughly towelled dry

before opening up. After removing the lid and servicing the camera, replace the lid straight away, rather than leaving it lying around. Before replacing the lid, make sure that no contamination such as dust, hair, salt, sand etc. has fallen onto the O-ring or O-ring recess, as a precaution we recommend to inspect the O-ring every time the lid is opened and to carry out the maintenance if necessary.



#### Procedure

- Place the lid on a firm non-slip level surface.
- The O-ring can be extracted using an O-ring extractor tool (make sure the tool as nosharp edges). Alternatively use the flats of the thumbs to gently stretch the O-ring on two faces thus making a small loop protruding a few mm. The loop can then be grasped between finger and thumb, to pull the O-ring over the lip.

- Clean the O-ring recess (the square groove where the O-ring sits) with a cotton bud.

- Inspect the O-ring all the way round its surface for damage such as cuts tears or contamination. This should be done visually and also by feeling the surface texture between finger and thumb.

- **IF THE O-RING IS DAMAGED OR SUSPECTED OF BEING DAMAGED, DISCARD**

**IT IMMEDIATELY.** A spare O-ring is supplied with your housing, or a replacement O-ring can be obtained from 10 BAR. If the O-ring is contaminated or suspected of being contaminated, clean it with a cotton cloth that is free of all chemicals or contamination. After cleaning inspect the O-ring again.

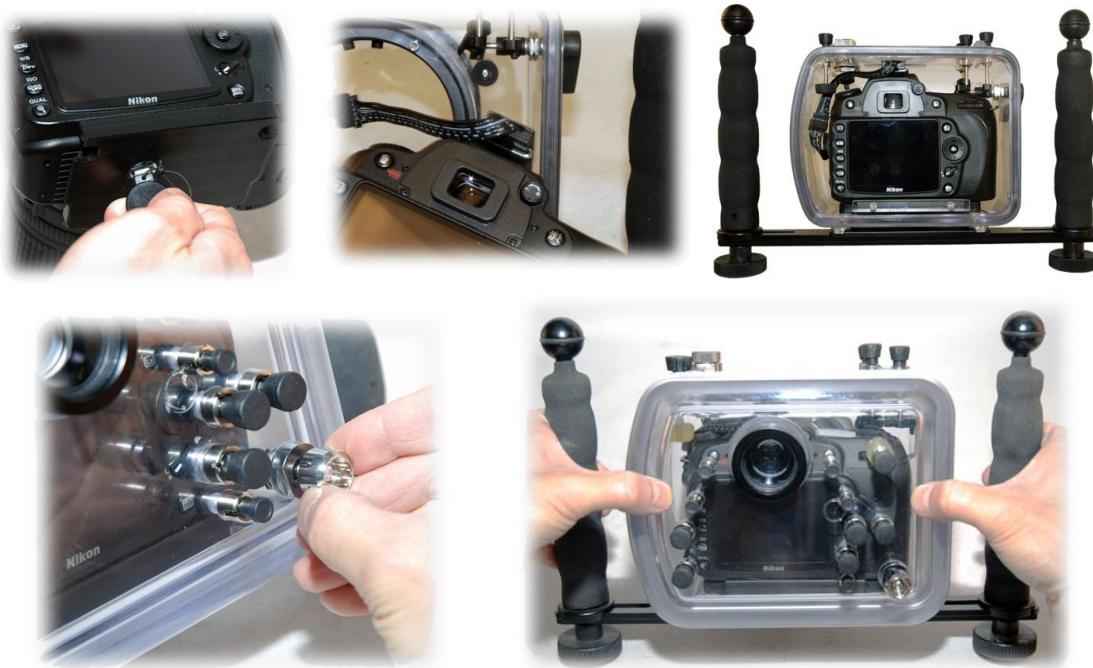
- Once the O-ring has been inspected and verified fit for use, apply a SMALL amount of silicone grease to the O-ring. The silicone grease must be evenly distributed round the O-ring
- Replace the O-ring into the groove; run a finger round the O-ring, to make sure it is snugly seated in the groove.

#### 4.4 Mounting the camera in the housing:

Remove the lens cap and wrist strap. The pressure release plug should be pulled out before inserting the camera. Attach the plastic slide tray to the camera's tripod mounting fixture with a coin, screwdriver or the end of the universal tool supplied. Take care not to excessively tighten the screw. Slide the camera into the body along the guide rail. Make sure the camera body reach the limit and test the function of the on/of



button on the body of the housing. Slide the hot shoe plug into the hot shoe Note: If you find that the buttons do not align properly with the controls, please check again that the camera is properly seated to the limit of the guide rail.



Replace the lid. Remember to ensure the pressure release plug is pulled all the way out while closing, otherwise the air cannot escape. Squeeze the lid closed all the way with the hissing of expelled air. Screw home the pressure release plug. There is no need to excessively tighten this plug. The seal is made by internal O-rings. The O-ring on the underside of the plug is just to keep out dirt.

After replacing the lid, make a final visual inspection of the main O-ring for contamination.

**Note: If the O-ring is in good contact, a thin black line, about 0.5 to 1mm in width should be visible, where the O-ring is in contact with the lid. Follow this line all the way round the edge of the seal, as a final check that the seal is good. The housing is now ready for the dive.**

**Important !!!** Before diving, make sure the pressure release plug is pushed back inside and then screwed home, do not over tighten this plug (finger tight only).

## 5. Use & Care of Housing

### 5.1 Pre Dive Function Check.

Just before entering the water, make a habit of reviewing the proper steps to close the housing and connect the bulkhead. Make a visual check of the O-ring seal. It is also useful to switch on the camera, and check that

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controls e.g. on/off, zoom, shutter functions operate normally.

- Check housing is closed
- Check O-ring is in the groove between housing and Acrylic
- Check battery and memory card status on the LCD display
- Check control knob and zoom function
- Check the Bulkhead is properly connected or blanked.

**Always avoid submerging the housing in hot water for a prolonged time or a cleansing tank where the water may be heated up by the sun.**

## **5.2 General Operation.**

The control levers and push buttons consist of internal double O-ring seals on a stainless steel shaft. This arrangement is very reliable, however as a precaution, when operating the controls, avoid excessively rapid movements, as this may distort the O-ring. Also please allow for the fact that the camera takes a few seconds to power on. If the camera does not appear to respond to a control action, make sure that no other controls are pressing on the camera, i.e. locking out further actions.

Wear the wrist strap; it is easy to inadvertently let go of the housing, especially if you are distracted.

## **5.3 Cleaning & Storage.**

The body & lid of the housing are made of 6061 Aluminum and Acrylic respectively. 6061 Aluminum is selected for its outstanding strength stiffness, hardness and toughness, While Acrylic for its crystal clear transparency and high gloss surface. Both of them have good resistance to weathering, although long-term exposure to sunlight should be avoided. Normal operating temperature range is 3°C to 36°C (Storage temperature: -10°C to 50°C)

It is good practice to rinse off your housing with fresh water after every dive. Avoid to exposure to fine sand. After a series of 10 or more dives, e.g. after a dive holiday, it is recommended to immerse the housing for 2-3 hours in warm water to dissolve any salt deposits that may have built up. No chemical cleaners should be used.

**Important!!! For long term storage please remove the main closure o-rings from body.**

## **5.4 Transportation.**

Please protect the housing during transportation. It is recommended to remove the handle, and shutter extension, and wrap the camera in foam or bubble wrap.

## **5.5 Accidents**

The impact resistance of the housing is excellent. However after an accident the alignment of the housing may have been altered. Therefore in the event of your housing suffering an impact force, e.g. being dropped, it is essential that you do not use the housing for diving. Please return the housing immediately for service and put a

note inside to indicate the nature of the accident, so that the severity can be assessed.

**6. Service**

To ensure the continued performance of your housing, it should be serviced every year, or after every 200 dives whichever is earlier. Please note the terms for servicing the housing posted at our website. A full service will include:

- Inspect all components for wears or damage (report if repair necessary),
- Clean all sealing surfaces,
- Replace all O-ring seals,
- Hydrostatic pressure test to 10 Bar.

**Note: Replacement of damaged components may require additional cost.**

**7. Warranty**

The warranty is valid within two years from the date of first purchase. The warranty applies only to the housing itself. 10BAR does not accept any liability either implicit or otherwise for any equipment housed inside, or used together with the housing. In the event of the housing flooding within the period of warranty, 10BAR will repair or replace the housing. Please note that disassembly of the housing will invalidate warranty. Please fill in the information below, and return a copy to 10Bar Underwater Housing at the address below, to validate the warranty.

(Copy to be retained by user)

Housing Type :	Date of Purchase :
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<b>Serial Number : (Labeled inside housing)</b>	<b>Dealer :</b>
<b>Owner's Name :</b>	<b>e-mail :</b>
<b>Owner's Address :</b>	<b>Tel :</b> <b>Fax :</b>

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**Please keep this document for future reference**

(Note: due to continuous improvement the latest model housing may differ slightly from those described in this document)

**(Copy to be returned to 10 Bar Underwater Housings)**